

**WHAT IS CLAIMED IS:**

1. A head slider having an air inlet end and an air outlet end, comprising:

a rail having a flat air bearing surface for generating a floating force when the disk rotates, said rail being disposed on a disk-facing surface; and

an electromagnetic transducer disposed near said air outlet end where said rail is positioned;

said head slider having a cavity on the air outlet end near said electromagnetic transducer.

2. A head slider according to claim 1, wherein said cavity is approximated by a curved surface that is represented by:

$$z = f(x) \cdot g(y)$$

where  $z$  represents the depth of the cavity,  $x$  the position thereof in the longitudinal direction of the head slider,  $y$  the position thereof in the transverse direction of the head slider,  $f(x) = a_m x^m + a_{m-1} x^{m-1} + \dots + a_1 x + a_0$ ,  $g(y) = b_n y^n + b_{n-1} y^{n-1} + \dots + b_1 y + b_0$ , and  $m$  and  $n$  are an integer of 2 or greater.

3. A head slider according to claim 2, wherein said cavity is approximated by a curved surface which is represented by an equation which is similar to said equation except that at least one of  $f(x)$  and  $g(y)$  is

replaced with a sine function.

4. A head slider according to claim 1, wherein said cavity is formed by removing a portion of the head slider which projects from the disk-facing surface when a predetermined voltage is applied to said electromagnetic transducer.

5. A head slider according to claim 1, wherein said cavity is formed by removing a portion of the head slider which floats less than said electromagnetic transducer when a predetermined voltage is applied to said electromagnetic transducer while said head slider is normally floating.

6. A head slider having an air inlet end and an air outlet end, comprising:

a front rail disposed on a disk-facing surface adjacent to the air inlet end and having a flat air bearing surface for generating a floating force when the disk rotates;

a pair of rear rails disposed on the disk-facing surface adjacent to the air outlet end and each having respective flat air bearing surfaces for generating a floating force when the disk rotates;

a groove defined downstream of said front rail for expanding air once compressed by said front rail to

develop a negative pressure; and  
a plurality of pads disposed on said front rail and  
at least one of said pair of rear rails;  
said head slider having a cavity on the air outlet  
end near said electromagnetic transducer.

7. A method of manufacturing a head slider having  
an electromagnetic transducer near an air outlet end,  
comprising the steps of:

applying a predetermined voltage to said  
electromagnetic transducer; and

polishing off a portion of the head slider which  
projects from a disk-facing surface when a predetermined  
voltage is applied to said electromagnetic transducer.

8. A method of manufacturing a head slider having  
an electromagnetic transducer near an air outlet end,  
comprising the steps of:

rotating a polishing member at a predetermined  
rotational speed;

causing the head slider to flow with an airflow  
which is generated when the polishing member is rotated;

applying a predetermined voltage to said  
electromagnetic transducer; and

polishing off a portion of the head slider which  
projects from a disk-facing surface and a portion of the

head slider which floats less than said electromagnetic transducer when said predetermined voltage is applied to said electromagnetic transducer.